

## REPLACEMENT DRAWING

1 / 13

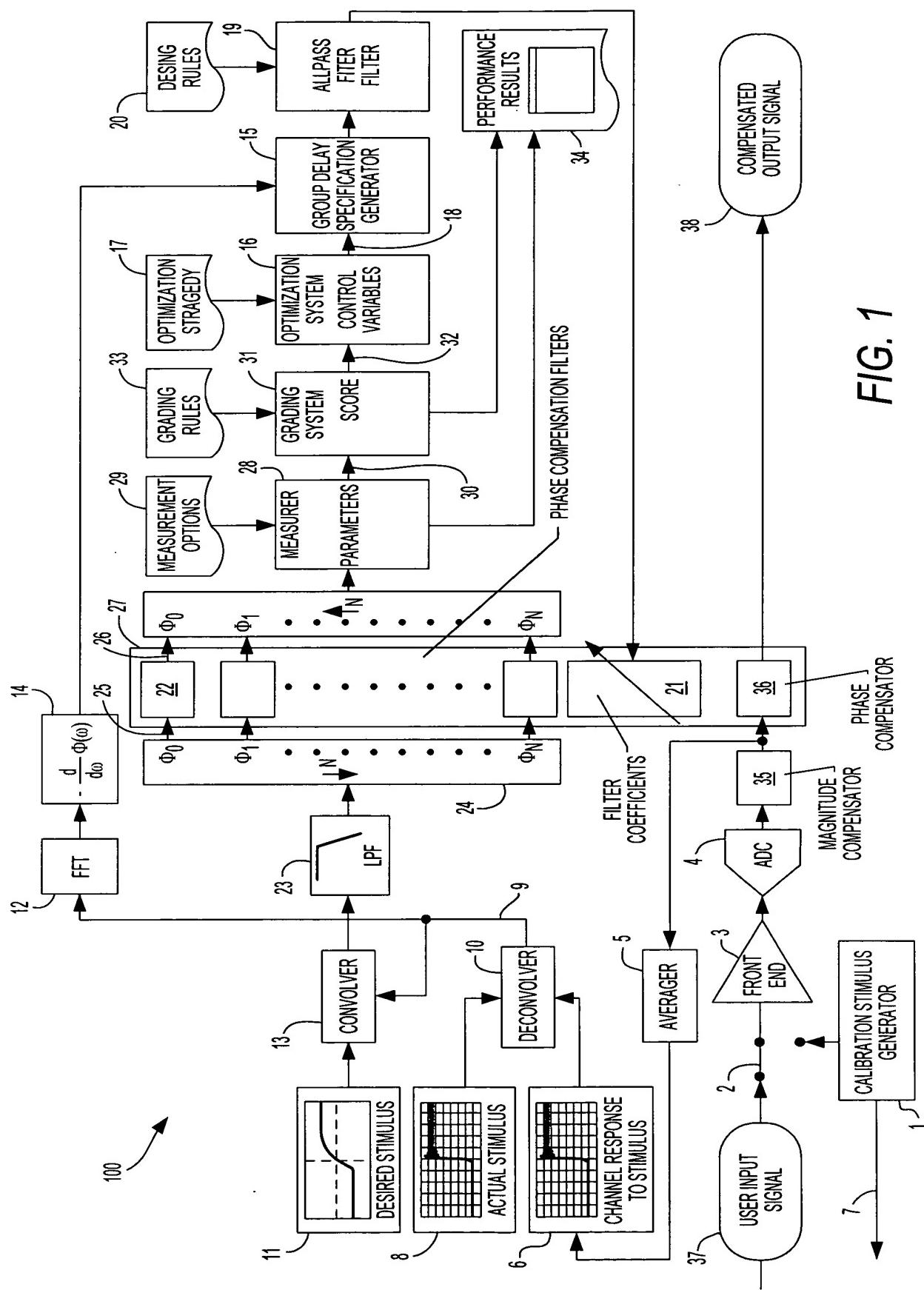


FIG. 1

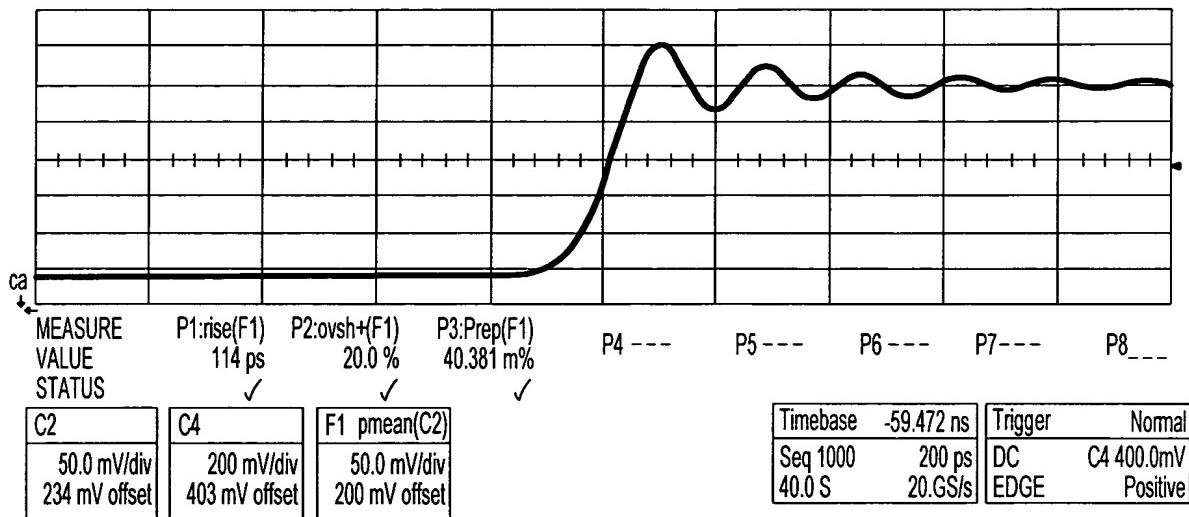




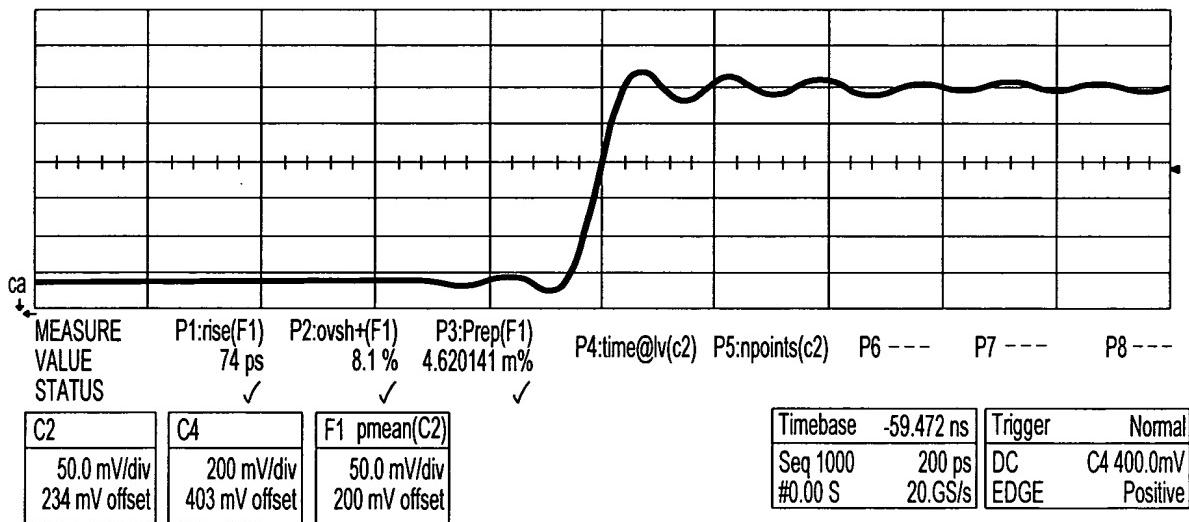
REPLACEMENT DRAWING

2 / 13

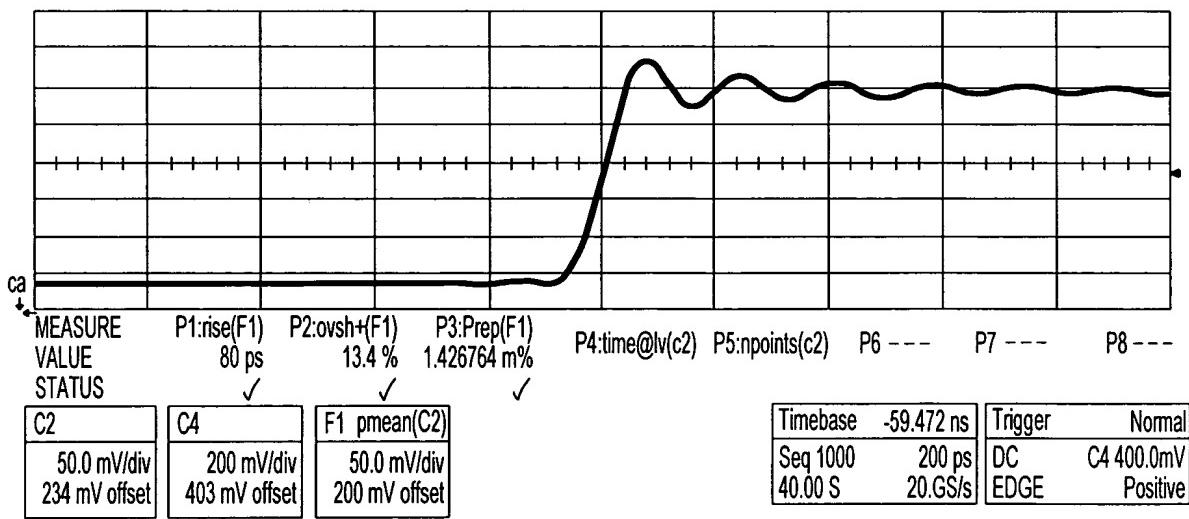
**FIG. 2**



**FIG. 3**



**FIG. 4**

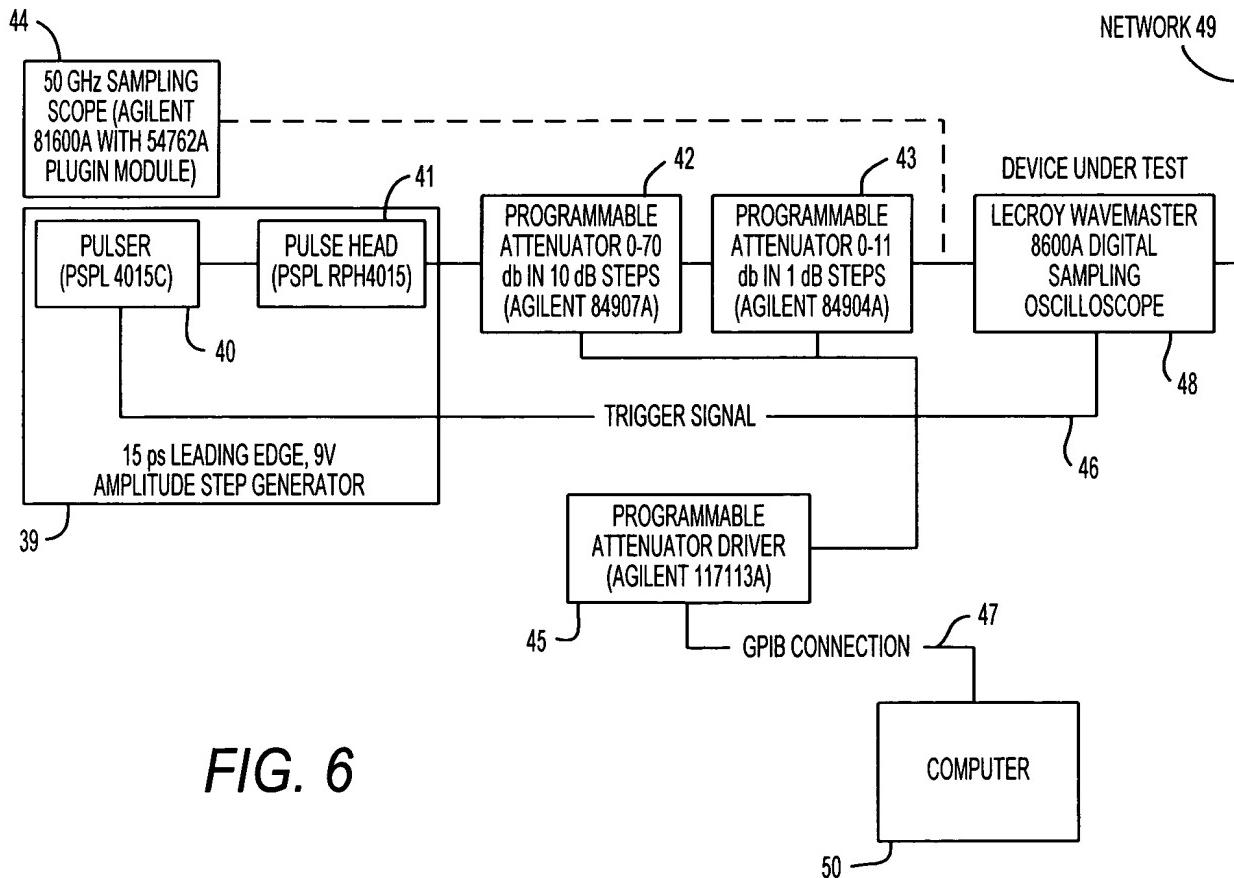
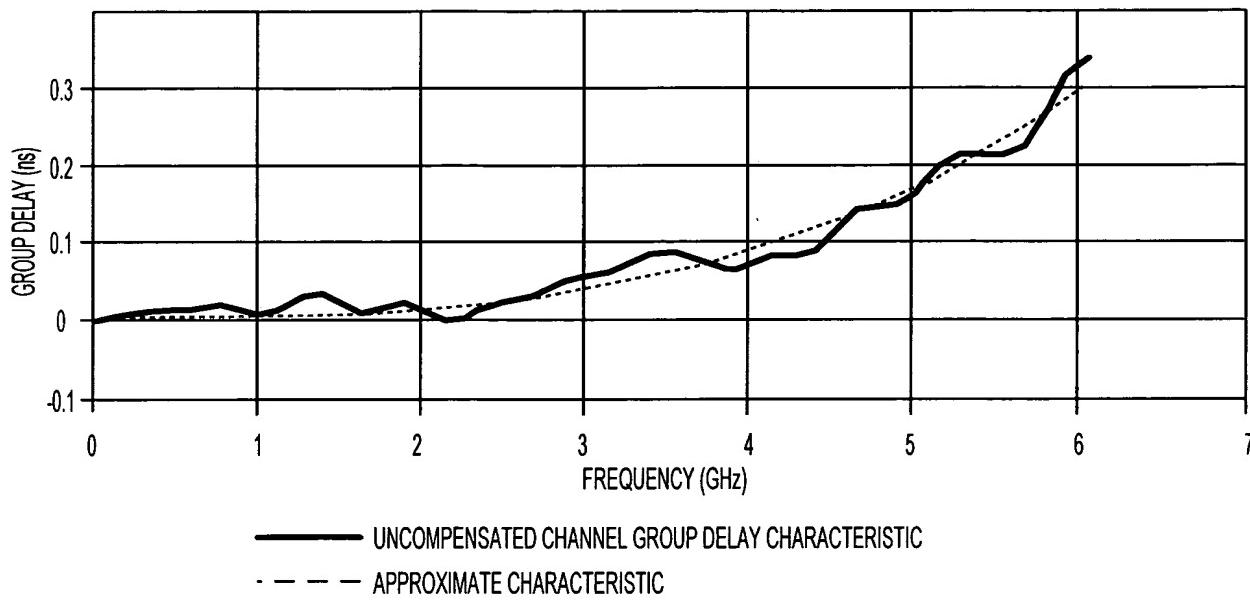




REPLACEMENT DRAWING

3 / 13

**FIG. 5**



**FIG. 6**

## REPLACEMENT DRAWING

4 / 13

FIG. 7

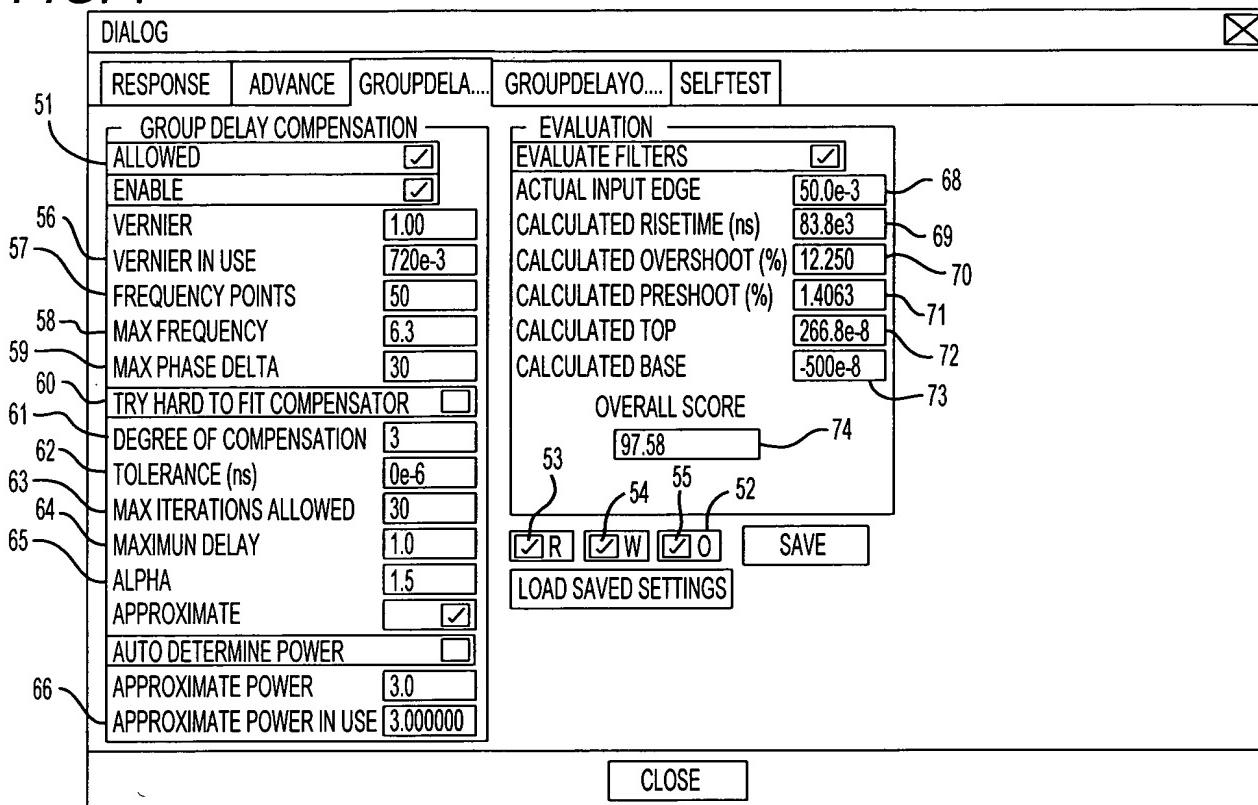
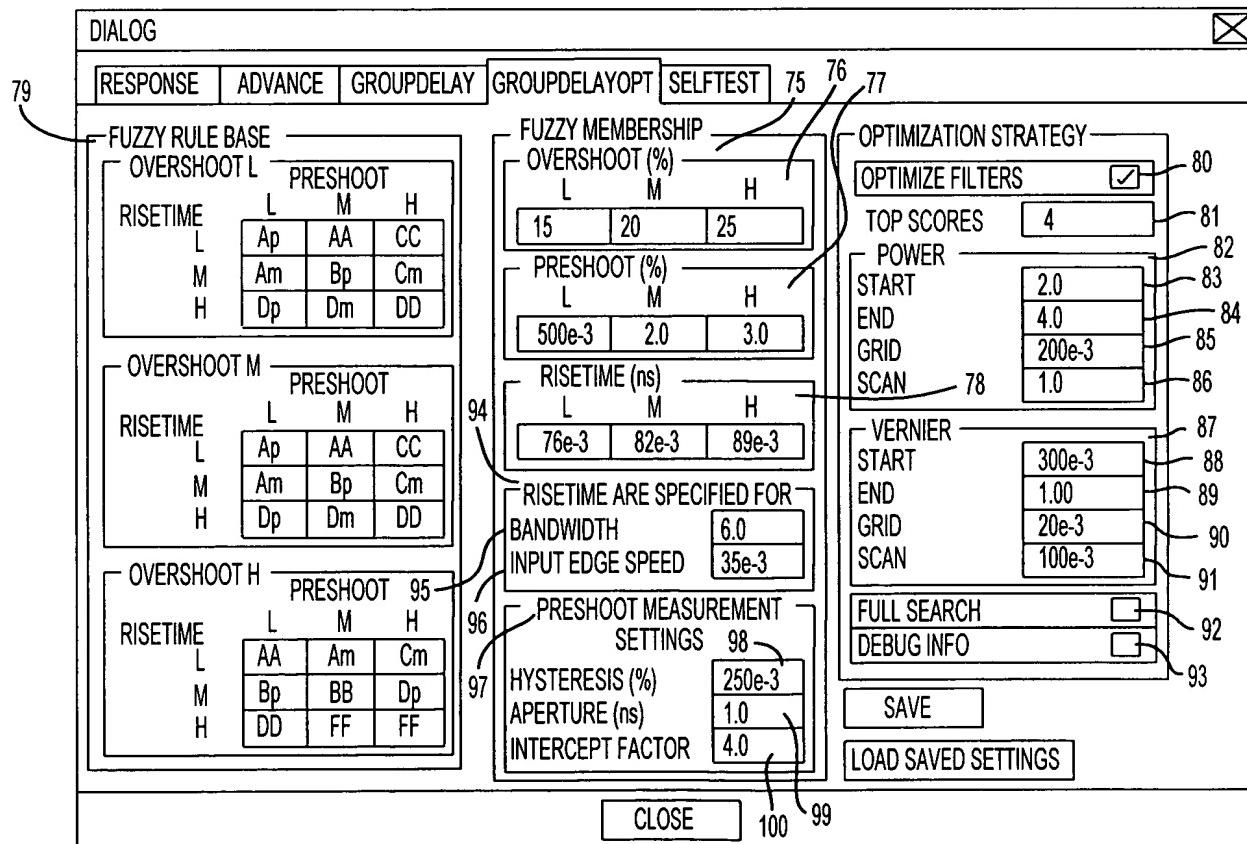


FIG. 8





## REPLACEMENT DRAWING

5 / 13

1	for n=0 ...N			FOR EACH RESPONSE POINT	
2	$R_n = GD_{comprel}(f_n, g_{i-1}) + gd_{spec_n}$			CALCULATE A RESIDUAL	
3	for j=0 ...2S-1			FOR EACH COEFFICIENT	
4	$J_{n,j} = \frac{\sigma}{\sigma(g_{i-1})_j} GD_{comprel}(f_n, g_{i-1})$			CALCULATE AN ELEMENT OF THE JACOBIAN MATRIX	
5	$H = J^T \cdot W \cdot J$			CALCULATE THE APPROXIMATE HESSIAN MATRIX	
6	for j=0 ...S2-1			GENERATE A MATRIX WHOSE DIAGONAL IS IDENTICAL TO THE HESSIAN MATRIX AND IS ZERO ELSEWHERE	
7	$D_{jj} = H_{jj}$				
8	$\Delta P = (H + \lambda \cdot D)^{-1} \cdot J^T \cdot W \cdot R$			CALCULATE THE CHANGE TO THE COEFFICIENT VALUES	
9	$g_i = g_{i-1} - \Delta P$			APPLY THE CHANGE TO THE COEFFICIENTS	
10	$mse_i = \frac{1}{N+1} \cdot \sum_n (gd_{spec_n} + GD_{comprel}(f_n, g_{i-1}))^2$			CALCULATE THE NEW MEAN SQUARED ERROR	
11	true	$mse_i > mse_{i-1}$		false	DID THE MEAN SQUARED ERROR INCREASE?
12	$\lambda = \lambda \cdot 10$	FAVOR STEEPEST DESCENT	$\lambda = \frac{\lambda}{10}$	FAVOR NETWONGAUX CONVERGENCE	

FIG. 9

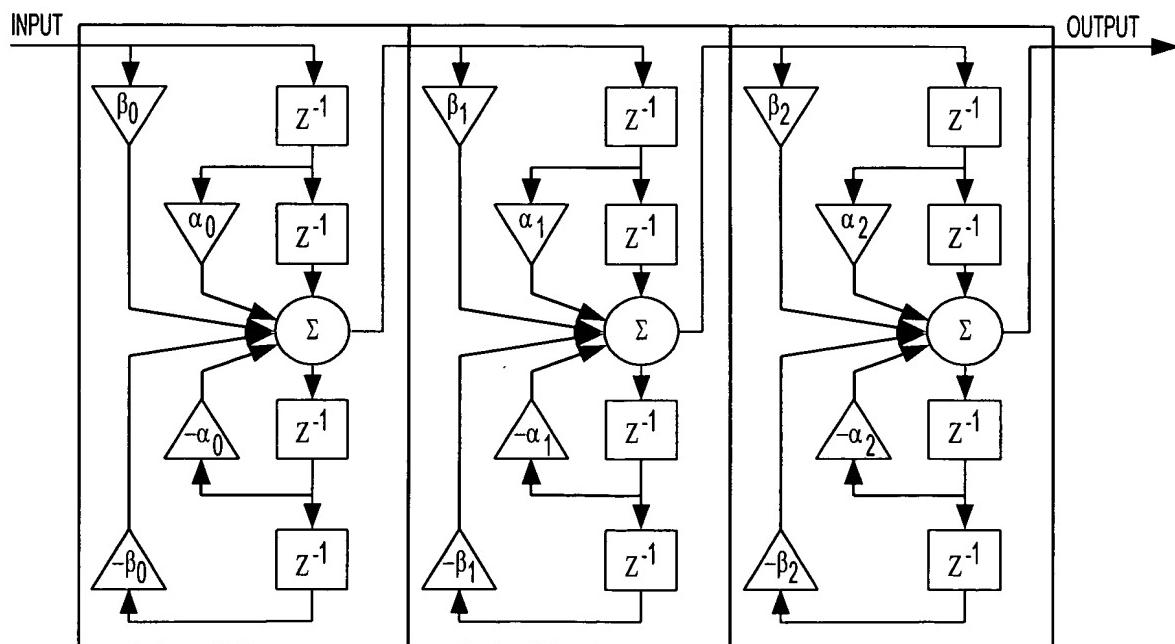


FIG. 10

## REPLACEMENT DRAWING

6 / 13

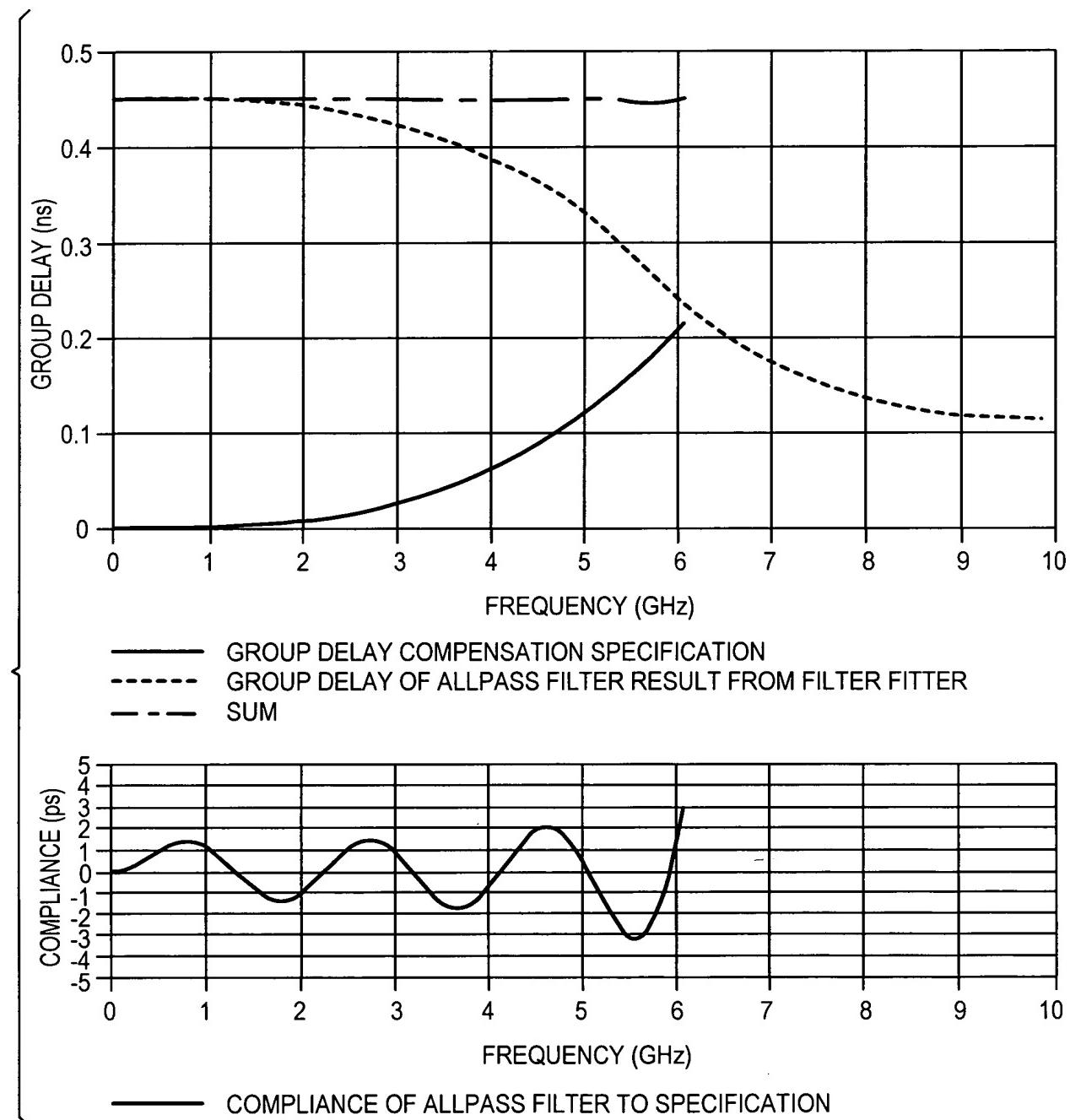


FIG. 11



# REPLACEMENT DRAWING

7 / 13

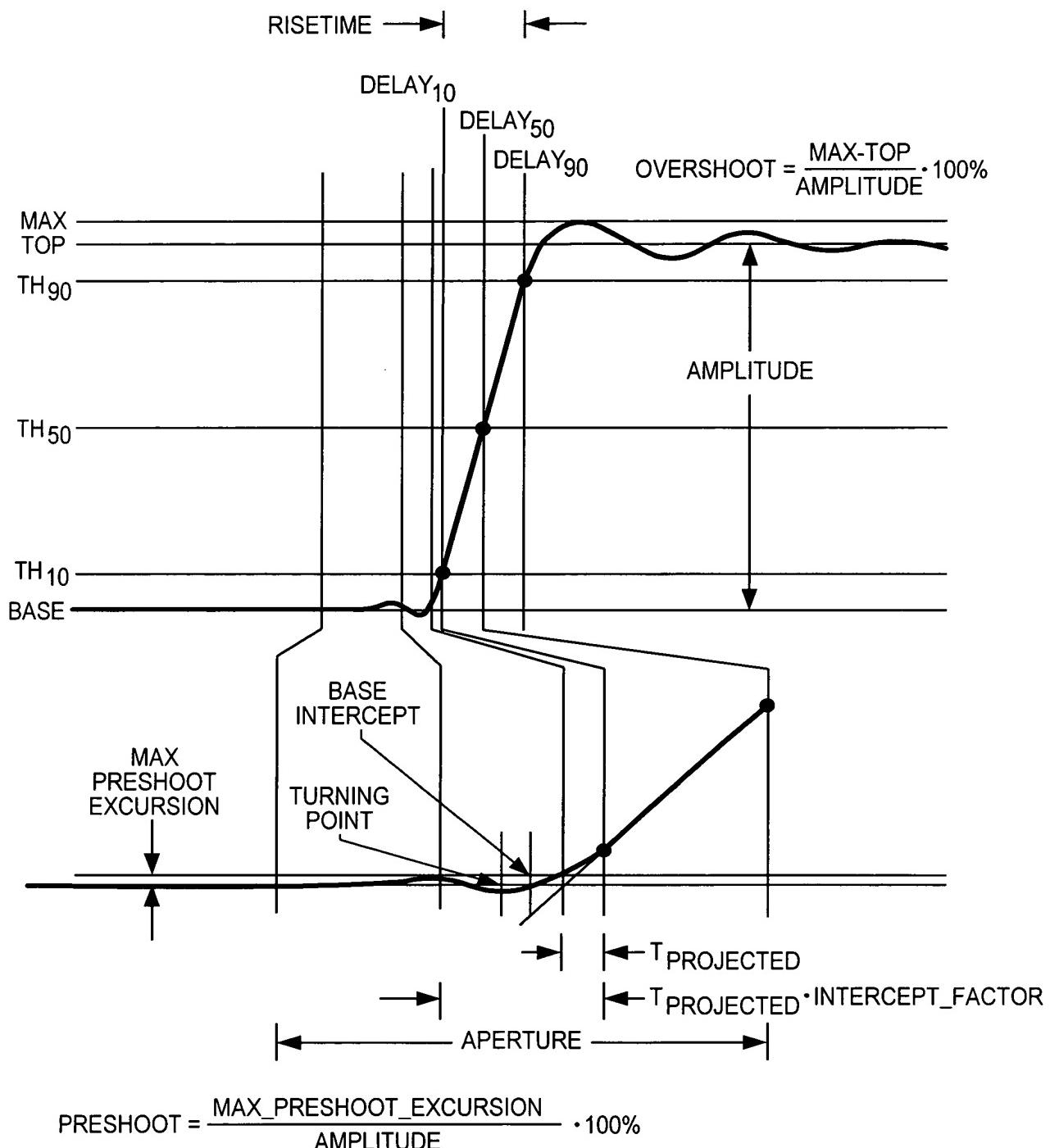


FIG. 12



## REPLACEMENT DRAWING

8 / 13

FIG. 13

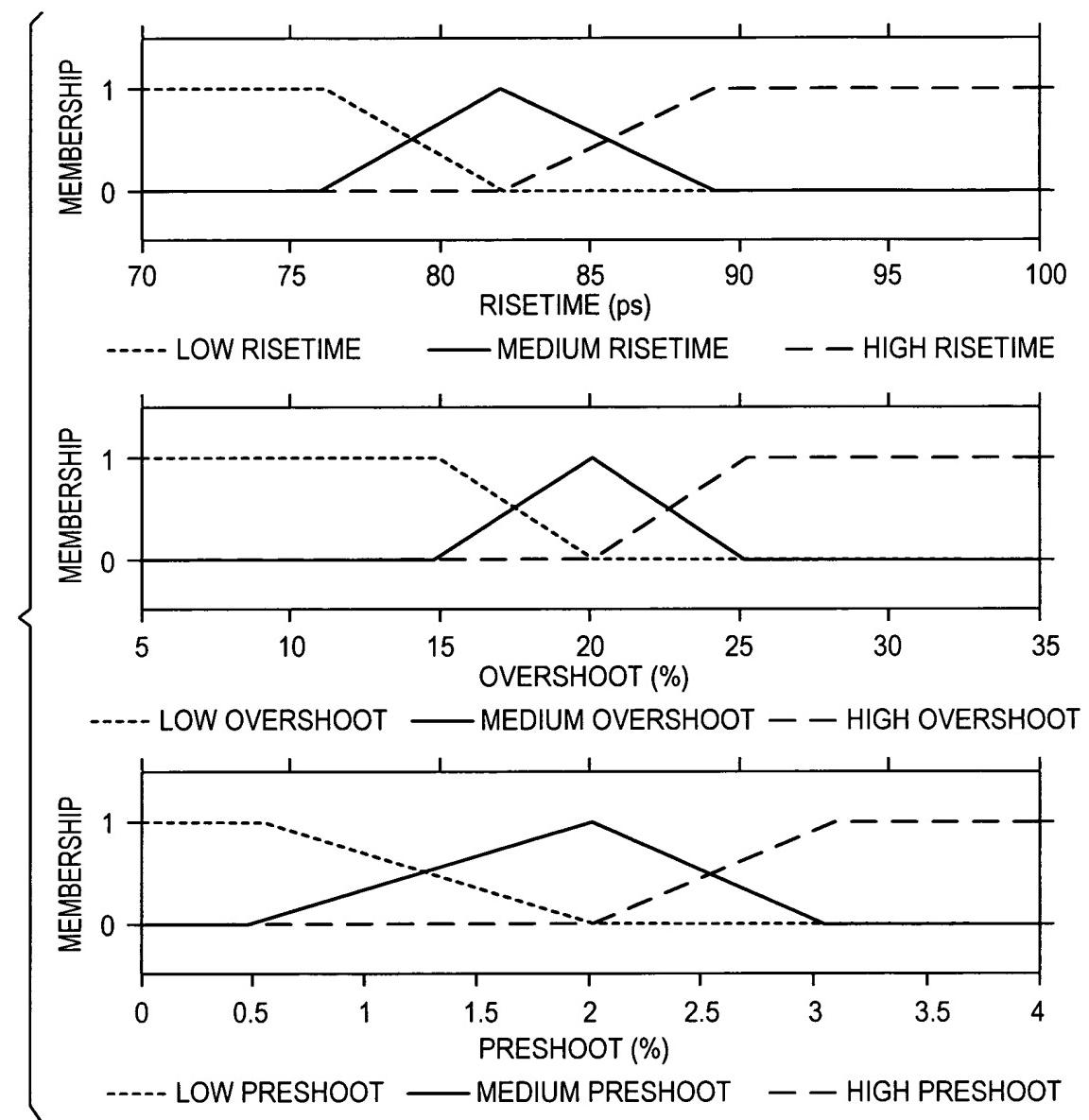
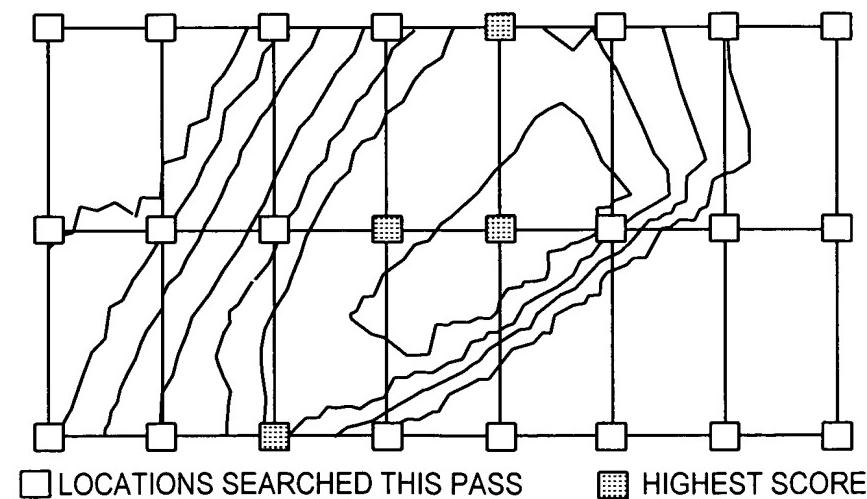


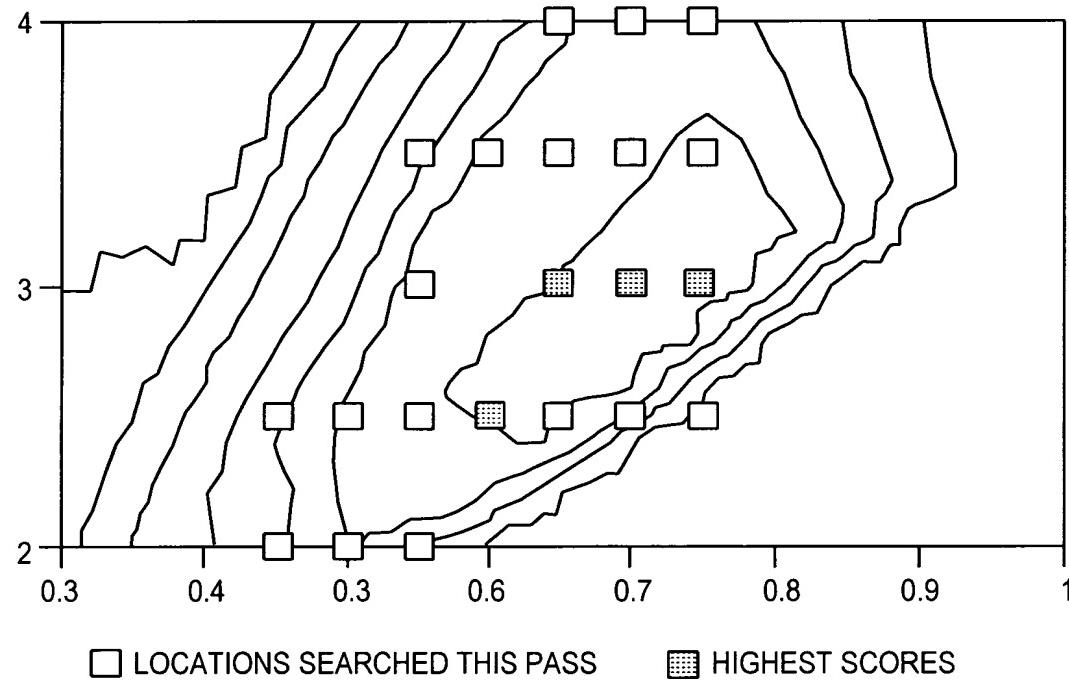
FIG. 14



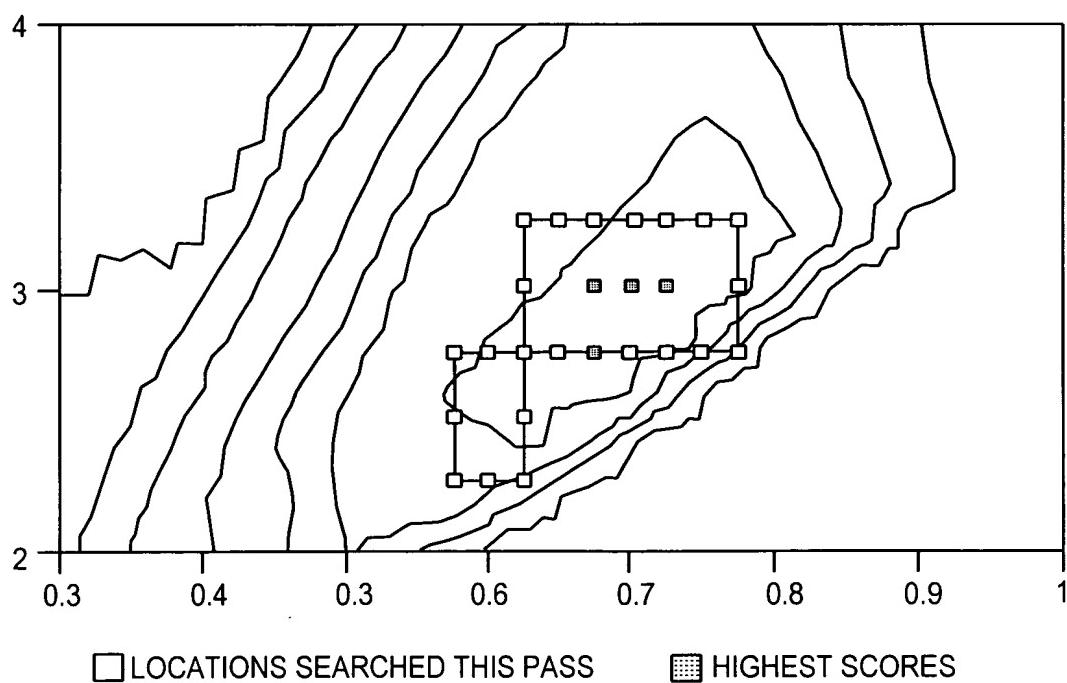


REPLACEMENT DRAWING

9 / 13



*FIG. 15*



*FIG. 16*



REPLACEMENT DRAWING

10 / 13

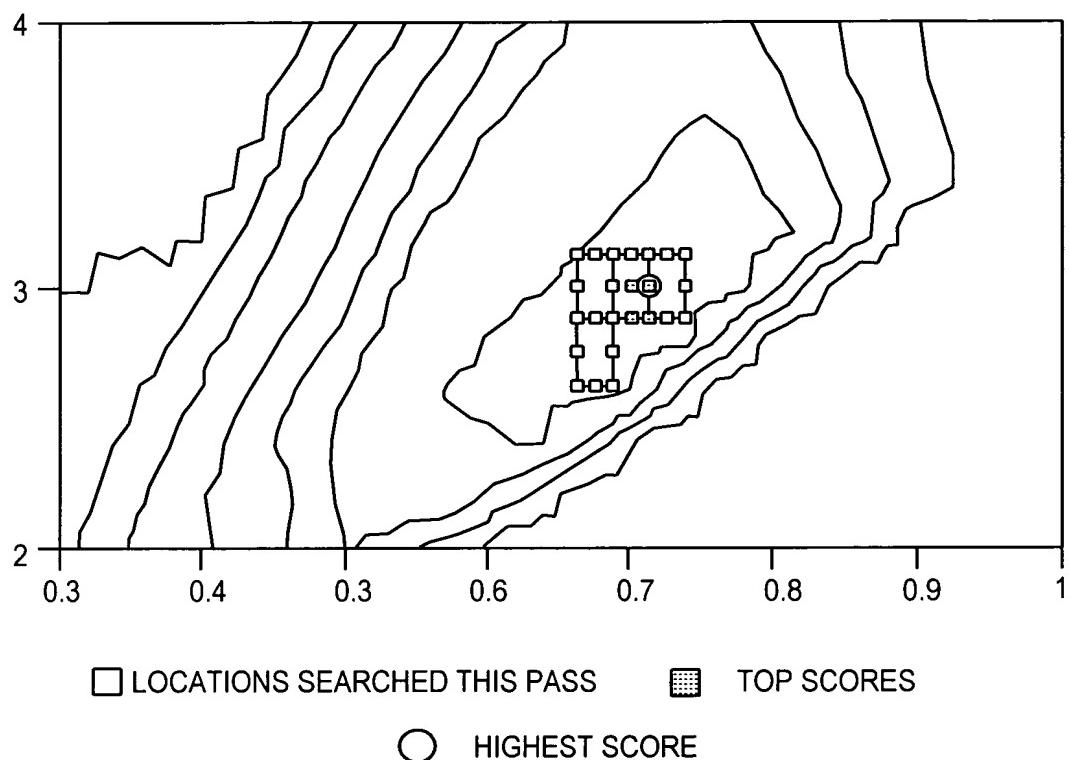


FIG. 17

REPLACEMENT DRAWING

11 / 13

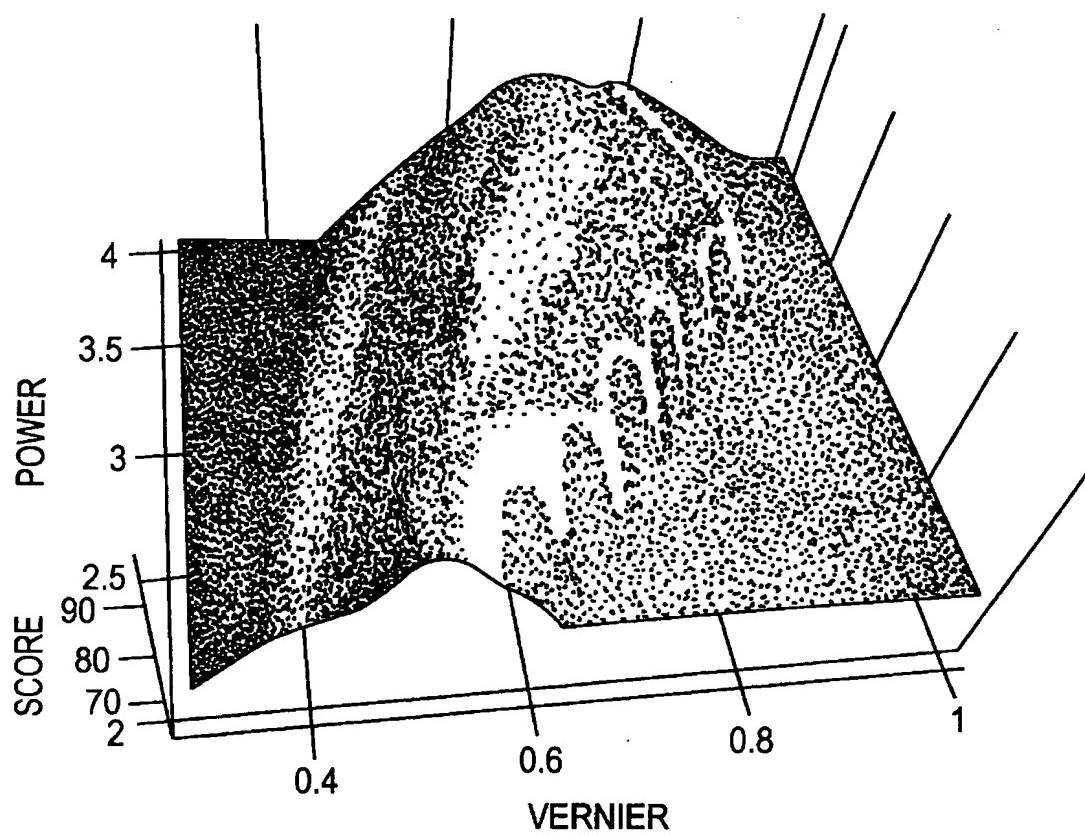


FIG. 18



## REPLACEMENT DRAWING



12 / 13

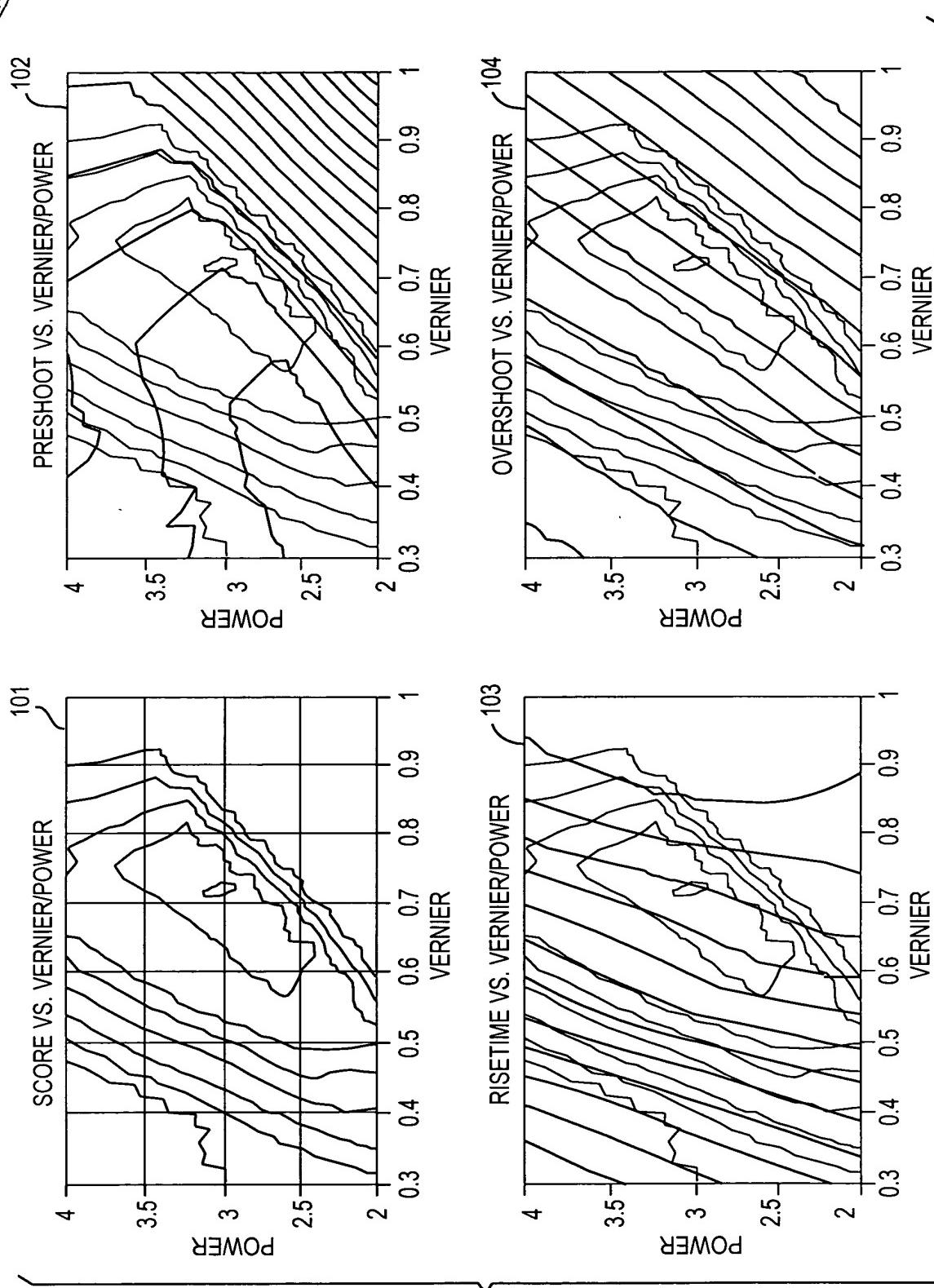


FIG. 19



REPLACEMENT DRAWING

13 / 13

FIG. 20

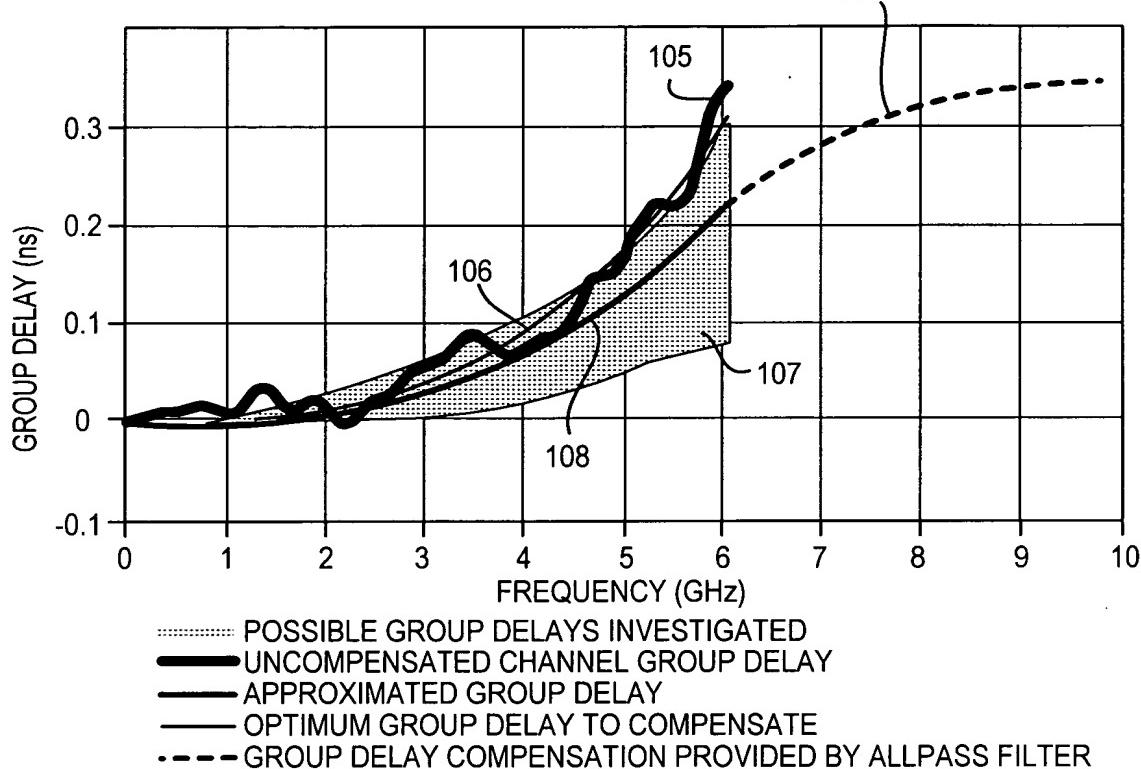


FIG. 21

